

Fast Transients: Closing the Loop on Air Force Professional Military Education

Authors:

Capt Walter Darnell, Capt David Gorman, Capt John Hamilton, Capt Matthew Hammerle,
Capt Devin Ivy, Capt Julie Janson, Capt James Ketterer, Mr. Scott Knuteson,
Capt Marcus McWilliams, and Capt Gregory Tengco

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Introduction

The father of modern military strategy, Carl Von Clausewitz, believed that an appropriate investment in the education of an officer would yield dividends on the battlefield. Clausewitz wrote, “Continual change and the need to respond to it compels the commander to carry the whole intellectual apparatus of his knowledge within him. . . . By total assimilation with his mind and life, the commander’s knowledge must be transformed into a genuine capability.”¹ This belief holds true today. A 2010 House Armed Services Committee report stated, “In-residence PME (professional military education) is a critical investment in the most important element of our military--- people.”² Maintaining our position as the world’s greatest Air Force depends upon maintaining the world’s finest, best-educated officer corps. Conversely, the demands of the current fiscal climate require us to seek out cost effective methods of delivering professional military education.³

When Colonel Russell Ritchey conceptualized what would become Squadron Officer School, he intended to create a program of practical application that encompassed the “whole man” concept.⁴ This course would emphasize group discussion, reduce lectures, enhance esprit de corps, and offer experiential leadership opportunities unique to the military.⁵ Since Colonel Ritchey’s inception, technological advances have given rise to innumerable comprehensive and respected distance-learning programs. Though these programs are effective in many instances, we must consider their effectiveness within the profession of arms.

¹ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 147.

² House Armed Services Committee, *Another Crossroads?: Professional Military Education Two Decades after the Goldwater-Nichols Act and the Skelton Panel*, 2010

³ Kelly and Ketterer, Unpublished SOS Critical Analysis Paper, 2013.

⁴ Col. Russell V. Ritchey, *Years of the Tiger*, ed Maj Roland Clarkson, et al. (Maxwell AFB, AL: Air University Press, 2000), 6-37.

⁵ Ibid, 81-110

This study intentionally limited its scope to address the Basic Developmental Education (BDE) portion of PME. Though findings and recommendations of this study could be partially extrapolated to address Intermediate Developmental Education (IDE) and Senior Developmental Education (SDE) courses, we recommend further study in order to more completely address the unique learning environments that IDE and SDE provide. The stated learning outcomes of the current in-residence SOS program will be preserved in any proposed solution. At present, the SOS residence program is designed to:

- a. Produce graduates who are able to lead at the tactical level
- b. Exercise leadership that reflects the Air Force core values and employs concepts of accountability, diversity, and coaching/mentoring to facilitate effective mission execution
- c. Employ problem-solving, decision-making, and process improvement tools to meet mission challenges at the tactical level
- d. Explain the broad capabilities and roles airpower plays in joint and coalition operations to achieve national objectives
- e. Forge professional relationships to facilitate teamwork at the tactical level⁶

⁶ Air University Catalog, AU-10, November 2012.

Distance vs. Residence Learning: Leveling the Field

Studies demonstrate that distance learning *can* be equal to or more effective than in-residence learning *if* key factors --- creating a comprehensive and valuable distance-learning program --- are satisfied. A Department of Education study reported, “Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction.”⁷ The same study also found that combining face-to-face and online instruction yielded better results than purely online engagement. In fact, the study revealed that in cases where online and residence learning was combined, learners reported an enhanced experience. While this study mostly focused on K-12 education, the analysis indicated similar results to student performance for both undergraduate and graduate levels of education.⁸

Whatever the future of professional military education becomes, the new reality will almost certainly involve distance learning. In order to provide the learner with an effective and efficient learning system, several factors must be considered. The effectiveness of distance learning programs depends on the quality of the courseware, effectiveness and availability of instructors, and engagement or motivation of the learner. Class size and interaction are other key components. Class sizes should not exceed twenty-one students, and these students learn most effectively in subgroups of seven.⁹

⁷ Office of Planning, Evaluation, and Policy Development, U.S. Department of Education. Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. Staff Study, (2009), xiv-xv.

⁸ Ibid

⁹ Stapp, Katherine. *Benefits and Costs of Distance Learning: A Perspective from the Distance Learning Literature Since 1995*. U.S. Army Training and Doctrine Command, (2001), 8-9.

Distance-learning instructors must act as a mentor and discussion facilitator. They should play a major role in guiding online discussions by injecting topics and directing a structured dialogue. Instructors should rely on classical methods of instruction, including behavioral and cognitive-based teaching, posing challenges and facilitating the discussion while learners “construct” their own knowledge and ideas. Content and delivery are critical components of distance learning. Design of the instruction is more important than the technology that delivers it, and while PME students and instructors will be geographically separated, it is important to note that the technology of distance learning should not replace the instructor. Hence, any PME distance learning courseware must be more than a fire-and-forget system. As occurs during in-residence programs, instructors must ensure that each student participates in discussions and engages in collaborative learning. That said, many methods exist to facilitate distance learning.¹⁰

Computer-assisted instruction, through online interaction, can be paired with traditional methods of instruction. Computer-mediated communication can be successful, based on factors like the size of each class, and the knowledge and experience of its students. For example, a distance-learning lesson on the National Security Council would be most effectively administered via a reading assignment or video, followed by an online “classroom” discussion, facilitated by the instructor.^{11 12}

¹⁰ Andrew Tolmie, James Boyle. *Factors Influencing the Success of Computer Mediated Communication (SMS) Environments in University Teaching: A Review and Case Study*. Case Study, Centre for Research into Interactive Learning, n.d.

¹¹ Mike Allen, "Evaluating the Effectiveness of distance learning: A comparison using Meta-analysis." *Journal of Communication*, (September 2004): 403-420

¹² Tolmie, *Factors Influencing the Success of Computer Mediated Communication (SMS) Environments in University Teaching: A Review and Case Study*.

Replicating student collaboration within a distance-learning program is the most pressing and critical challenge faced by administrators of online programs. Perhaps the most valuable aspect of PME is the networking afforded military members from multiple careers. The opportunity to interact, communicate, and provide perspective among their peers is invaluable and irreplaceable. The opportunity to study amongst one's peers, even in an online environment, may create a culture of competition, developing a network of officers otherwise unexposed to one another. This represents the most critical shortfall of the current correspondence programs utilized for Air Force PME. Isolated learning programs like the course 20 or its follow on, do not allow any networking or exposure outside of one's unit. Other major shortfalls of distance learning, as compared to residence learning, include poor student self-discipline, a lack of leadership lab studies (providing experiential leadership), and distractors to include high home-station operations tempo and family requirements.

Research demonstrates that distance learning can be an effective tool, comparable to residence learning in most every way, *if* certain critical requirements are satisfied. These critical equalizers include carefully planned courseware, ease of access to instructors, appropriate instructor facilitation, small class size, CBTs paired with online discussion, and interaction among peers. The following sections will examine possible courses of action (COAs) for administration of PME.

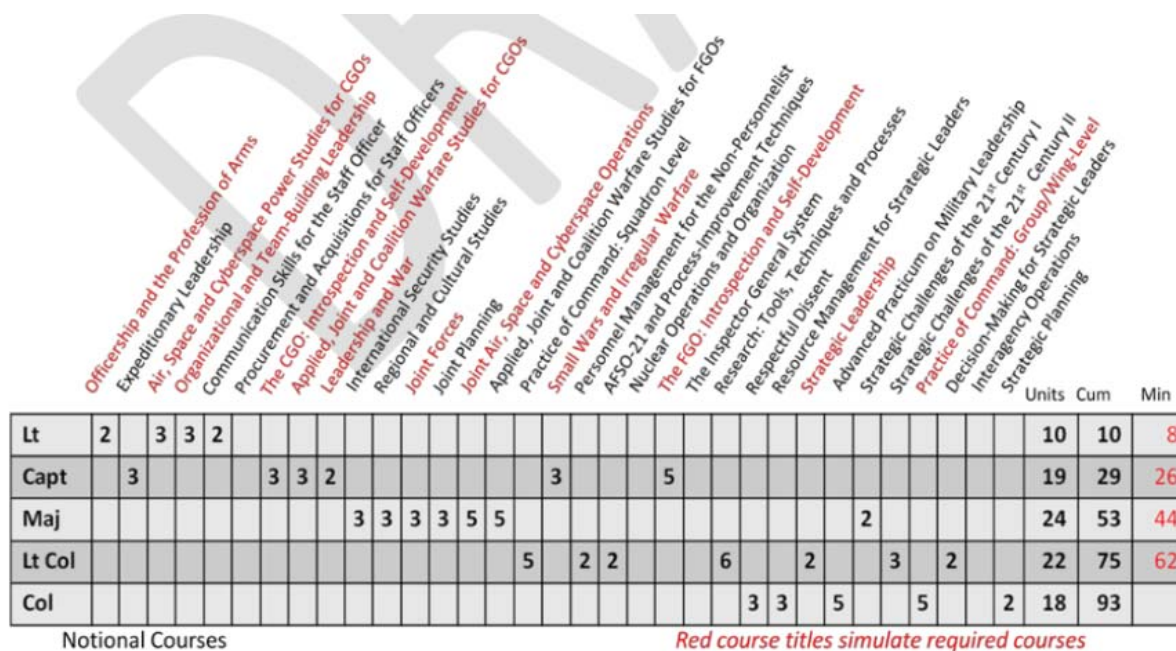
COA Number One: The Learning Air Force Model¹³

The Learning Air Force Model represents a paradigm shift in PME delivery. Instead of the current episodic approach, continuous learning through four to six week distance learning seminars would become an integral requirement in Airmen development. This model allows Airmen to digest leadership lessons throughout a career, rather than attempt to consume copious leadership lessons in three time-in-service based episodes. The Learning Air Force Model would require officers to meet a PME objective each year, through completion of distance learning programs. An officer's single uniform retrieval format (SURF) would not list all of the courses attended --- the SURF would simply state that the officer had or had not successfully completed the PME required for that period. In addition to the required distance learning PME, competitive, shortened, in-residence programs would remain in place for students ranked in the top portion of the order of merit or wing commander discretion.

Each four to six week distance-learning course would be held primarily in a virtual environment, with the opportunity for some "hands-on" classes to be taught locally. Individuals could tailor their course plan to their schedule, interests, and requirements. Air Force and unit leadership could mandate certain required courses, as necessary for their mission. This flexibility would allow for learning to occur at the most appropriate times in an individual's career. When the individual is about to begin supervising and evaluating another, for example, they could take courses related to personnel evaluations preparation. When an individual in-processes a new unit, their plan would focus more on becoming a technical expert in their career field. As the officer progresses in rank, courses would relate more to force integration and joint operations. Courses would be defined and built based on the individual and commander's requirements, as well as

¹³ Air University. (2012). *Learning Air Force Vision*. Unpublished Paper, Maxwell AFB.

those set by Air Force Doctrine Document 1-1 and US Code Title 10 Sec. 2151-2156. This would allow the Air Force to distance itself from the current one-size-fits-all approach to PME. The below figure shows an example of an officer's career learning.



REF USAF LEARNING MODEL

The Learning Air Force model would include the award of an online Master's degree through Air University (AU), similar to Air War College's current model of concurrently enrolling students in a master's program. This graduate degree program would streamline the demands currently placed on our young Airmen and ensure that the force is obtaining graduate-level education in Air Force-defined critical areas. Furthermore, an online master's program through AU would nearly eliminate the need for tuition assistance. Tuition assistance provides up to \$4,500 yearly in funds for further education for military members. In 2010, the Department of Defense spent \$544 million providing this service. Substantial budget savings would result if

tuition assistance were unnecessary because Airmen's PME satisfied the graduate level education requirement.¹⁴

As nearly all officers own a personal computer and have access to the Internet, the Learning Air Force Model would be easily deliverable. Were an individual be unable to complete their yearly PME due to operational needs or personal reasons, the wing commander would have authority to waive or reduce the yearly requirement. However, this could lead to a deficiency among officers assigned to operationally strained mission sets, which often require the most leadership.

The Learning Air Force model would allow Airmen to accomplish their PME objectives while performing their mission. Additionally, it would couple with the advanced academic degree requirement, curtailing the need for Airmen to be involved in multiple programs. The Learning Air Force model would require six to ten hours per week of readings, writings, and discussion posts while assigned to a seminar. Focus on the written portions of the course may address critical force deficiencies.

"A consistent complaint from senior leaders across all Combatant Commands is that staff officers' writing skills are below par for a strategic level organization.¹⁵" To rectify this deficiency, the Learning Air Force model would utilize intensive writing courses, encouraging improvement in this critical area. While it is not feasible to have all courses rely heavily on writing --- given the workload required in providing quality feedback --- several courses would

¹⁴ Donna Miles, *Officials Seek DOD-wide Tuition Assistance Plan*. October 20, 2011. <http://www.defense.gov/News/NewsArticle.aspx?ID=65726> (accessed January 31, 2013).

¹⁵ Joint Staff J-7. *The Joint Staff Officer Project*. April 2008 <https://www.mcu.usmc.mil/> (accessed January 31, 2013).

be aimed at developing strategic writing skills. This written interaction would also allow some networking to occur in the on-line environment.

The Learning Air Force Model would result in the loss of some networking opportunities within the Air Force. The loss of face-to-face interaction would sacrifice some levels of team building and relationship development. Conversely, networking would still occur over the course of Airmen's studies, as they would require collaboration with classmates. This may not develop the same depth of relationship; however, it will vastly increase the quantity. Additionally, networking across career fields will occur earlier in an Airman's career.

The experiential leadership currently developed in SOS is valued for its ability to provide time-critical, high-stress leadership opportunities for each student. With the Learning Air Force Model administered primarily online, experiential leadership in its current format would be difficult to replicate. However, creating local courses and in-unit team challenges offer avenues to recreate the experience.

While the majority of the course incorporated in the Learning Air Force Model would be completed in the online environment, it is believed that some experiential leadership models would be required to rival the current system. These experiential leadership blocks could be administered by the base education and training center, but a large degree of coordination would be required. Ideally, no TDY-in-place would be required to complete the objectives of the Learning Air Force Model, yet TDY-in-place remains a viable option. Obviously, a balance would have to be achieved between mission demands and education needs, at the discretion of the unit commander.

It is important to emphasize that this model relies heavily on collaborative learning. For it to be effective, active facilitation is required for each course. As discussed in the "Distance vs.

Residence Learning” section above, computer based learning cannot unilaterally encourage learning. Personal accountability and active collaboration are required aspects of the education. As a result, this system will require a substantial increase in instructors and/or vetted facilitators. If this system is to be incorporated across the entire Air Force, a substantial cost increase is expected. If constructive feedback is sacrificed for cost-saving initiatives, the model will lose its value as an effective educational tool.

The final consideration for the Learning Air Force Model is the previously non-existent opportunity afforded to members of the Air Force Reserve and Air National Guard. For example, a traditional reservist, whose civilian employer is a major airline, would now have the opportunity to complete PME via distance learning, develop relationships, network with active-duty peers, earn a master’s degree at no cost, and earn retirement points or credit toward a “good year.” Six to ten hours per week represents a significant investment to a guardsman or reservist. However, six to ten hours per week is more feasible than eight consecutive weeks away from a civilian employer. Furthermore, such a program serves to equalize PME among the total force, whereas the current system offers few opportunities to members of the Guard and Reserve.¹⁶

¹⁶ Based on Guard and Reserve attendance in FY 11 and FY 12; when the course increased in time and decreased in frequency, Guard and Reserve attendance reduced by fifty-seven percent. During FY 11, a five-week course, offered seven times, only twenty-five guard or reserve seats went unfilled. Conversely, FY 12, an eight-week course offered four times, left 58 seats unfilled.

COA Number Two: The 'NATO Model'

The current offering of SOS is accepted as a beneficial and comprehensive program in a junior officer's leadership education, with 3,652 students planned to attend during Fiscal Year (FY) 13.¹⁷ These high attendance numbers, combined with travel and temporary duty expenditures make SOS an expensive program, totaling \$21.3 million per year.¹⁸ This COA would attempt to remedy this condition, adopting much of the proven content and structure in the current course, though differing in the following aspects:

1. Consolidation of coursework and a resulting reduction by ten educational days, with specific focus on eliminating selected hours devoted to early class release and repetitive educational tasks, citing the seven-stage Critical Analysis assignment as specific example.¹⁹

2. Adoption of a more robust application process, designed to accommodate fewer students than the previous course's admissions, based upon future Air Force leadership requirements. Candidate officers would enter a competitive, direct application process administered by the Squadron Officer College, and approved by local wing commanders. This departs from the current goal of 100 percent Line of the Air Force (LAF) attendance, which is directed by a wing-apportioned quota system.

3. Continued utilization of a robust distance-learning course, though only targeted towards those attending SOS correspondence. The distance-learning curriculum would address the five elements of the current educational construct (Effective Communications, International

¹⁷ Figures furnished by Dr. Tony Klucking, Assistant Professor, Squadron Officer College, 18 January 2013.

¹⁸ Ibid.

¹⁹ Squadron Officer School. *I-5400 Lesson Plan: Critical Analysis*, Maxwell AFB, AL: Air University, Air War College, August 2012, <https://soc.blackboard.com/bbcswebdav/institution/SOC/SOS%20Residence%20Eight-week/1.%20Course%20Materials/5.%20International%20Security%20Studies/I-5400A%20CC%20CD%20CE%20CF%20Critical%20Analysis/I-5400-LP-Critical%20Analysis.pdf>.

Security Studies, Leadership, Profession of Arms, and Warfare Studies),²⁰ to improve student skills in these areas, with in-residence students receiving additional ‘top-off’ lessons in each category. Completion of distance learning would not be a prerequisite for in-residence attendance.

4. The coursework within this COA would still center upon the fundamental tenets of tactical-level leadership, though emphasizing greater exposure to operational-level thought and decision-making implications for the next generation of Air Force leaders.

As explained by a former Air War College student, future military leaders must be a “multidisciplinary team of free thinkers [who]... take a disciplined approach to consider plausible possibilities and counteractions,²¹” in the event of unanticipated, unconventional “strategic shocks,” as outlined by Nathan Frier in *Known Unknowns*.²² A robust basic developmental education (BDE) will foster this growth, with an updated SOS experience primed as a breeding ground for such a transformation.

While COA Two could potentially reduce SOS enrollments by a sizeable portion, the implications for Air Force officer Intermediate Developmental Education (IDE) and Senior Developmental Education (SDE) programs would be minimal. In the present form, SOS admits the largest number of students of the three PME programs, consistently representing a sizeable annual program cost. The education of 3,652 officers and civilians in the current SOS program will cost a projected \$21.3 million during FY 13.²³ As the enrollment numbers of the upper two

²⁰ Squadron Officer School, *SOS Course Syllabus*, Maxwell AFB, AL, 10-11.

²¹ Pearse, Col. John W. *Officer Education: Preparing Leaders for the Air Force of 2035*, Maxwell AFB, AL: Air University, Air War College, February 2009, http://dtlweb.au.af.mil/exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8zNDYwNw==.pdf, 21.

²² Frier, Nathan. *Known Unknowns: Unconventional “Strategic Shock” In Defense Strategy Development*, Carlisle, PA: Strategic Studies Institute, November 2008, <http://www.strategicstudiesinstitute.army.mil>, vii.

²³ Klucking, 18 January 2013.

programs are miniscule in comparison to SOS (480 and 225 for FY13, respectively),²⁴ the cost incurred by each one-year program is perceived as a necessary expenditure in the continued education of highly competitive candidates for future command and promotion potential within the Air Force.

The revised version of in-residence SOS would remain true to four of the current educational construct's five core focus areas of Effective Communications, International Security Studies, Leadership, Profession of Arms, and Warfare studies.²⁵ However, the new system would replace the 'Leadership' with 'Tactical and Operational-Level Leadership', estimating that SOS in-residence students would require only a small refresher on personal and team leadership skills, with most ready to begin learning the operational and strategic-level implications of modern military decision making. This proposed change is due to the modern occurrence of leadership requirements in high-demand, expeditionary operations early in a captain's career, as seen in postings to Provincial Reconstruction Teams (PRTs) in Afghanistan, captains serving as action officers on combatant command staffs, and potential for detachment or squadron command in selected career fields.

While shortened, the course would still include the physical challenges utilized by current SOS students, which include the time-sensitive problem solving of 'Project X,' athletic competition during Field Leadership Exercises (FLEX) and Field Day events, Team Leadership Projects, and the final Commandant's Challenge.²⁶ All interactions would occur within a flight-sized environment of approximately fourteen students, though there would be fewer squadrons and flights, due to more selective in-residence enrollment.

²⁴ Ibid.

²⁵ *SOS Course Syllabus*, 10-11.

²⁶ Squadron Officer School, *Student Evaluation Guide*, Maxwell AFB, AL, 15-18, 23-24.

Regarding proposed differences in COA Two, perhaps most obvious would be the compression of the current schedule, removing many hours of networking possibilities and social interaction, as this is deemed to be the most ancillary aspect of the SOS coursework. While this would make the course a more intellectually rigorous experience, the condensed schedule could lead to diminished social experience within and amongst flights. Beyond these changes, the interactions with senior non-commissioned officers (SNCOs) would be augmented by a brief mentorship program with career field-matched Air Command and Staff College (ACSC) or Air War College (AWC) students, so as to best prepare their SOS understudies for the challenges of field-grade officership, and gain insight into the professional lessons gleaned by these officers as they continue on to further operational and staff positions. Indeed, the *Transforming-BDE* model SOC explored in 2007 highlighted the need for a structured mentor program as a critical component of CGO education.²⁷

The current FY 13 version of SOS will educate 3,652 students at an annual cost of \$21.3 million, during forty educational days. If compressing the course to thirty educational days the per-capita TDY cost would shift from \$5,824 to \$4,837 per military student, resulting in \$3.6 million in cost savings.²⁸ While offering significant financial advantage, this model's primary drawback is the possibility of restricting future leadership opportunities for non-attendees. Under these more restrictive and competitive SOS admissions constraints, officers would have to demonstrate, within the first five to six years of their career, a capacity for high-level leadership. Officers not selected could be retained and would not be restricted from promotion; however, the likelihood of these officers tracking primarily as operators or project officers would increase. In

²⁷ Peterson, Michael E. *Transforming Basic Developmental Education: The Future Role of the Mentor in Company Grade Officer Development*, Maxwell AFB, AL: Air University, Air War College, August 2007, http://dtlweb.au.af.mil/exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS80MjIzNA==.pdf

²⁸ Based upon figures from Dr. Tony Klucking, 18 January 2013.

cases of “late bloomers,” where an officer demonstrates capabilities later in their career, IDE and SDE remain available. Concisely stated, SOS in-residence does not have to be a prerequisite for later programs. Such a track would not diminish the value or contribution of these officers, but much as occurs in the German and British Royal Air Force, these officers would likely become technical experts --- hence the phrase, “NATO Model.”

COA Number Three: The Hybrid Model

Hybrid distance and residential learning models, such as those used by the U.S. Army War College (USAWC) for Senior Developmental Education (SDE), and by universities such as Norwich University for graduate level education, have demonstrated immense success. These courses utilize distance-learning modules in conjunction with a “capstone” or residency program. As envisioned, this course would retain the current episodic approach to PME. Concerning SOS, students would first undertake distance-learning courses with the same small cohort of students with whom they will later study in residence. These distance-learning programs would take place over several months, before the cohorts attended a residence program at Maxwell Air Force Base. As mentioned above, small course size is a critical component for successful distance learning programs. Additionally, these students would interact in the online environment, reading and responding to one another’s thoughts, ideas, and experiences. Collaboration and teamwork would begin during the online phase of the course.

Distance-learning courseware would focus predominantly on the academic components of PME, knowledge comprehension and some application. Each week, during the distance-learning phase, students would perform required readings and draft graduate-level responses in an online forum where classmates would be expected to read and respond with their own thoughts. Instructors would serve as moderators and facilitators. Additional technical options, such as online group video discussions and video lectures are possible. Students would be graded, not by testing as in the current correspondence program, but by critical, graduate-level writing assignments. This practice and instruction in critical writing would address a serious

shortfall found among staff officers today. After all, as Col. Ritchey stated, “Written expression should be to the student as the jump is to the cavalryman.”²⁹

The residence component of the course would focus on a capstone program, running two to four weeks in length with a focus on elements of PME that are not possible to replicate through distance learning, particularly experiential leadership and team building. Valued elements of the existing residential PME program, such as Project X and Field Leadership Exercises (FLEX), can be retained or given more emphasis. Additionally, students’ time to interact outside of the classroom would increase, as the knowledge comprehension and application portions of the course would have been completed during the distance-learning portion.

The hybrid model would retain the current PME structure, while better using technology to replicate the components of PME that can be performed at home station. Acknowledging that technology is not a cure-all, elements of PME that are best done in-residence are preserved by the in-residence capstone. This should result in a similar, quality PME experience that saves officers' time and saves the Air Force travel costs. The value of an in-residence program, capturing most company-grade officers, must not be underestimated. The authors of this essay completed an opinion survey among the current SOS class (13B). The resounding belief from the student body held in-residence learning as superior in every way.³⁰

The USAWC has implemented a course similar in structure to this description, and a recent paper reports the students enrolled, “have an advantage of being able to immediately apply the principles from their USAWC education to their professional and personal experiences

²⁹ Ritchey, *Years of the Tiger*, 33.

³⁰ Reference Appendix A.

since they are completing the majority of their coursework online.”³¹ This implies that the students, studying from home station, are able to immediately apply leadership lessons and apply or test leadership theory immediately.

An accepted risk with this program includes a shorter residential period, potentially limiting the extent of team building. There is value in the existing SOS structure, providing classes the time to progress through Tuckman's model of Forming-Storming-Norming-Performing. Although time differs for each group, most need approximately five weeks to fully progress through this model.³² By grouping students together for distance learning in the months before attending SOS, learning collaboration can replicate portions of Tuckman's model, making team building more efficient during the residential phase. The distance learning structure and design must encourage social interaction through devices such as forums, chat rooms, and discussion threads. Signs of an establishing group identity and conflict --- the forming and norming stages according to Tuckman's model --- are evident in distance learning courses. Thus, students would arrive at their residence or capstone program having progressed through an undetermined portion of Tuckman's model.^{33 34}

Assuming the average travel cost per student is \$1,300, this structure reduces temporary duty expenditures between thirty-nine and fifty-nine percent (\$2,352 and \$3,528) per student for the four and two-week option respectively, based on reduced per diem and lodging costs.

Hypothetically, if a similar structure were applied to Air Command and Staff College and Air

³¹ Jeff Groh, Colonel Susan Myers. "The Future of Strategic Leadership Development at the U.S. Army War College." *Integral Leadership Press*, 2010.

³² Colonel Mark Czelusta, interview by SOS 13B Think Tank Team 2. *Commandant, Squadron Officer College* (January 18, 2013).

³³ S.A. Walker, *Social Strategies and Group Development in Discourse for E-Learning*, School of Education, University of Leeds, (2004).

³⁴ Gina Abudi., *The Five Stages of Project Team Development*. May 8, 2010.
<http://www.pmhut.com/thefive-stages-of-project-team-development> (accessed February 4, 2013)

War College, further savings may result from the reduction in TDY and PCS expenditures. These savings and restructuring need to be further researched.³⁵

The infrastructure of Air University and individual base education centers would have to be modified to support a hybrid model. Since the majority of the course would be taught via correspondence, instructors would need to be dynamic enough to shift from in-classroom roles to online-teaching roles. It is assumed that the instructor's workload actually increases with distance learning, as students each approach the instructor with different questions, at different times. Deeper study of the instructor workload in a distance-learning PME course is needed. To that end, developing effective distance learning programs will require an unknown front-end investment.

A significant benefit of this model is that it reduces the amount of time that members are away from their home units and families. By decreasing TDY time, units benefit from increased continuity and productivity. Most SOS students have already accomplished multiple deployments, and their families would welcome the reprieve. Hypothetically, this model is more attractive to the total force, as its flexibility and reduced residency time should allow more members of the Guard and Reserve to participate based on participation from the Guard and Reserve during Fiscal Years 2011 and 2012.

A concern with this approach is that the distance-learning phase could create an additional burden on CGOs who are already balancing busy schedules that include developing technical expertise in their job, deployments, and graduate study. The distance-learning approach should be constructed to have maximum educational impact, with minimal disruption of home

³⁵ Based upon figures from Dr. Tony Klucking, 18 January 2013.

life. Further, commanders' support is required to compensate the demands of the distance-learning component with lower-priority home station demands.

Finally, in order to maintain a highly flexible course that best allows Airmen to leverage available time, the asynchronous method of distance learning would be preferred over the synchronous method. The conventional "box of books" correspondence program, which utilizes online bulletin boards and recorded media offer the greatest flexibility to learners. Conversely, synchronous methods, utilizing interactive webcasts, video conferences, chat rooms, or online games, offers higher fidelity human interactions and tighter feedback loops to support the learning process. That said, the non-real time nature of synchronous tools does allow the "best of the breed" curriculum to be most easily proliferated, which would be critical when reaching students across time zones.

Conclusion

Despite the advances in distance learning, it cannot singularly support the educational requirements of the United States Air Force, at any level of PME. Like John Boyd's "Snow Mobile" Model, we must rip apart the existing and available technologies to create a hybrid product, capable of providing us with a new device --- capable of fulfilling our mission to educate in a changing climate.³⁶

A hybrid model, as described by COA number three, offers the greatest return on investment. This model would maintain the valuable experiential leadership lessons, networking opportunities, and critical writing skills development, all while reducing cost. This model has demonstrated success elsewhere, including within sister services, and is thus a viable solution. Whatever the result, we must keep in mind the words of the United States Congress: "Military officers must think critically, communicate well, conduct themselves with integrity, and lead others to perform strenuous tasks in difficult and often dangerous situations. As a matter of national security, the country's continuing investment in the PME system must be wisely made."³⁷

³⁶ Boyd, John, and Chuck Spinney. *Strategic Game*. Strategy Presentation, Atlanta: Defense and the National Interest, 2005.

³⁷ House Armed Services Committee, *Another Crossroads?: Professional Military Education Two Decades after the Goldwater-Nichols Act and the Skelton Panel*.

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APPENDIX A

SOS SURVEY RESULTS

Throughout the research and writing of this article, an electronic opinion survey was conducted using the current in-residence class of Squadron Officer School (SOS) as the population. This appendix will report these findings and discuss their applicability to the article conclusions.

At the time of analysis, the survey was available for four days on the SOS Blackboard announcement page, a site regularly used by all SOS students, via a link which led to the survey on the Air University portal. It consisted of 21 multiple choice and ranking questions which covered student background (role in the AF, past PME experience) and resident versus distance learning (preferences, strengths and weakness). Out of a population of 726 students, 83 completed the survey, resulting in an 11.4% sample size. It should be noted that at the time of completion, SOS students were in the fourth week of an eight-week course.

The majority of the sample (69%) consisted of active duty Air Force captains who have completed both SOS in correspondence, attended an in-residence Professional Military Education (PME) program in the past, and are currently attending SOS in residence. In addition, the majority of the sample (77%) reported that they have completed some sort of resident and distance learning (not PME specific). Therefore, the majority of the sample possessed knowledge and opinions of the pros and cons associated with residence and distance learning. In fact, the majority (66%) of those who responded felt that “both resident and distance learning courses had some advantages and some disadvantages.” A third of respondents felt that resident learning was superior in every way, compared to only one respondent who felt that distance learning was superior. When asked what quality of learning depended most upon, class format was ranked

third (182 rank score) after individual participation and effort (266) and instructor's skills (236); two elements that can be achieved effectively through both resident and distance learning.

Nonetheless, the rest of the data points overwhelmingly to a preference of residence learning. When addressing specific educational concerns, improved writing skills was the only category which the majority (62%) of respondents felt that distance learning could achieve more effectively. Resident learning was the preferred choice for all other categories, often vastly so: networking (96%); experiential leadership (96%); improved overall leadership abilities (94%); overall educational experience (92%); delivery of course material (69%); coverage of more detailed information (59%). In four of these six categories, the majority (58% or more) of respondents felt that resident learning was "much more effective" at achieving positive objectives. In addition, only 23% found that distance learning would be "much more effective" at improving writing skills; the rest of respondents believed that distance learning would be "somewhat more effective" or equally effective.

Finally, the majority of participants (86%) responded that classroom dynamics (57%) and networking with peers (29%) were the biggest advantages of resident learning. Not surprisingly, the majority (62%) identified the same two categories as the biggest disadvantages of distance learning (41% and 21%, respectively). As the main article repeatedly states, these are two critical elements of leadership training.

If this sample is representative, despite the hardships associated with resident learning, such as time away from home station and families, Air Force captains and their civilian equivalents resoundingly not only prefer in-residence learning, but find it vastly more effective. These findings are significant because they represent the exact population that will be most affected by changes to PME. Also, as current students in the resident SOS program, 2/3 of

which possess experience with both resident and distance learning programs, this sample provides the most timely and validated opinions as to the effectiveness of each type of classroom format. Therefore, these findings provide substantial support for courses of action two and three as laid out in the main article.